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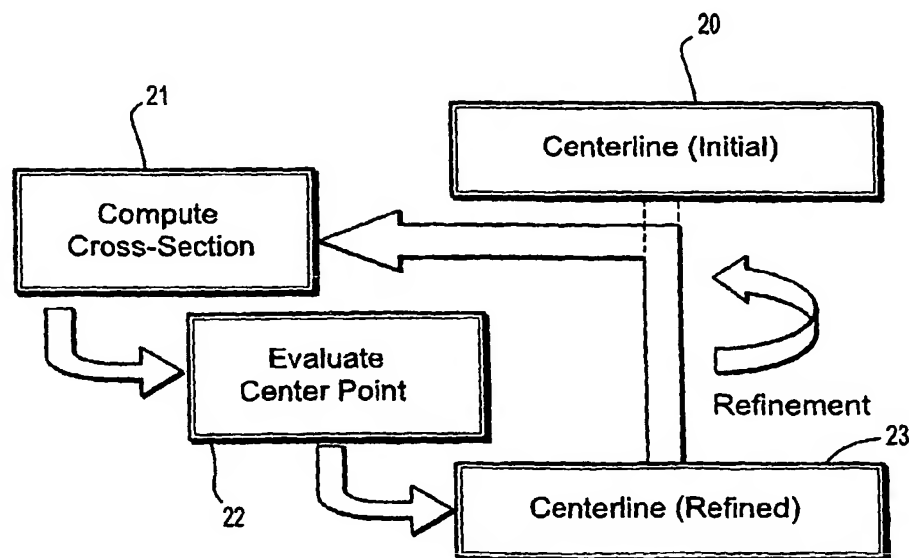
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[Continued on next page]

(54) Title: SYSTEM AND METHOD FOR OPTIMIZATION OF VESSEL CENTERLINES



(57) Abstract: Methods are provided for optimizing a vessel centerline in a digital image. For instance, a method includes providing a digital image of a vessel wherein said image comprises a plurality of intensities corresponding to a domain of points in a D-dimensional space, initializing a centerline comprising a plurality of points in the vessel (step 20), determining a cross section of the vessel at each point in the centerline (step 21), evaluating a center point for each cross section of the vessel (step 22), and determining a refined centerline from the center points of each cross section (step 23).



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# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/39895

<b>A. CLASSIFICATION OF SUBJECT MATTER</b> IPC(7) : G06K 9/00 US CL : 382/131 According to International Patent Classification (IPC) or to both national classification and IPC		
<b>B. FIELDS SEARCHED</b> Minimum documentation searched (classification system followed by classification symbols) U.S. : 382/128, 131; 128/916; 434/272; 600/160, 407, 431, 454, 467, 473, 507 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) EAST		
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5,150,292 A (HOFFMAN et al.) 22 June 1992 (22.09.1992), figure 8 and column 7, line 54 through column 8, line 4.	1-55
A	US 6,047,080 A (CHEN et al.) 4 April 2000 (04.04.2000), figure 1 and column 4, line 41 through column 5, line 23.	1-55
A	US 6,148,095 A (PRAUSE et al.) 14 November 2000 (14.11.2000), figure 3 and column 6, line 34 through column 7, line 56.	1-55
A	US 6,546,271 A (REISFELD) 8 April 2003 (08.04.2003), figure 1 and column 5, line 45 through column 9, line 8.	1-55
A	US 6,501,848 A (CARROLL et al.) 31 December 2002 (31.12.2002), figure 1 and column 7, lines 43-62.	1-55
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.		
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Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230		Authorized officer Leo Boudreau Telephone No. (703) 305-8576